SANTA CRUZ BIOTECHNOLOGY, INC.

RDH11 siRNA (m): sc-72265

BACKGROUND

RDH11 is a member of the short chain retinol dehydrogenase/reductase family that acts as an oxidoreductive catalyst towards retinoids. Expressed in a wide variety of tissues including the liver and prostate, RDH11 can reduce both *trans*- and *cis*-retinaldehydes, as well as oxidize *trans*-retinols. RDH11 prefers $NADP^+$ as a cofactor and, although it has both oxidative and reductive capabilities, it is more efficient in the reductive direction. In the retinal pigment epithelium, RDH11 completes the final step in the retinoid cycle of pigment regeneration by catalyzing the oxidation of 11-*cis*-retinol to 11-*cis* retinal. No diseases are currently related to mutations in the gene encoding RDH11.

REFERENCES

1. Lin, B., et al. 2001. Prostate short-chain dehydrogenase reductase 1 (PSDR1): a new member of the short-chain steroid dehydrogenase/reductase family highly expressed in normal and neoplastic prostate epithelium. Cancer Res. 61: 1611-1618.
2. Kedishvili, N.Y., et al. 2002. Evidence that the human gene for prostate short-chain dehydrogenase/reductase (PSDR1) encodes a novel retinal reductase (RalR1). J. Biol. Chem. 277: 28909-28915.
3. Haeseleer, F., et al. 2002. Dual-substrate specificity short-chain retinol dehydrogenases from the vertebrate retina. J. Biol. Chem. 277: 45537-45546.
4. Kasus-Jacobi, A., et al. 2003. Characterization of mouse short-chain aldehyde reductase (SCALD), an enzyme regulated by sterol regulatory element-binding proteins. J. Biol. Chem. 278: 32380-32389.
5. Kim, T.S., et al. 2005. Delayed dark adaptation in 11-*cis*-retinol dehydrogenase-deficient mice: a role of RDH11 in visual processes *in vivo*. J. Biol. Chem. 280: 8694-8704.
6. Kasus-Jacobi, A., et al. 2005. Functional characterization of mouse RDH11 as a retinol dehydrogenase involved in dark adaptation *in vivo*. J. Biol. Chem. 280: 20413-20420.
7. Gallego, O., et al. 2006. Comparative functional analysis of human medium-chain dehydrogenases, short-chain dehydrogenases/reductases and aldo-keto reductases with retinoids. Biochem. J. 399: 101-109.

CHROMOSOMAL LOCATION

Genetic locus: Rdh11 (mouse) mapping to 12 C3.

PRODUCT

RDH11 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RDH11 shRNA Plasmid (m): sc-72265-SH and RDH11 shRNA (m) Lentiviral Particles: sc-72265-V as alternate gene silencing products.

For independent verification of RDH11 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72265A, sc-72265B and sc-72265C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RDH11 siRNA (m) is recommended for the inhibition of RDH11 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RDH11 gene expression knockdown using RT-PCR Primer: RDH11 (m)-PR: sc-72265-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.